Laboratory Testing for Pertussis

Test	Sensitivity	Specificity	Comments
DFA	30-71%	66-100%	Should be used only as a screening test in conjunction with culture and PCR
Culture	11-73%	100%	Organism is extremely labile; requires prompt transport and plating; sensitivity best when specimen collected during catarrhal stage of the disease
PCR	61-99%	88-100%	No single technique is universally accepted or validated; no FDA cleared test available; culture should also be performed whenever PCR testing is performed
Serological Tests			Difficult to interpret, especially in immunized people; no FDA cleared test available; lack of standardized interpretive criteria
IgM			Generally not helpful
IgG	63%*	99%*	Specificity depends on the antigen used (PT is specific); more sensitive than IgA; paired sera can also be tested
IgA			Specificity depends on the antigen used; rarely detected in uninfected vaccinees; young infants may not be able to make IgA

References:

1. Centers for Disease Control and Prevention. 2000. Guidelines for the Control of Pertussis Outbreaks. CDC Atlanta, GA.
2. Chan EL, et al. 2002. The Use of TaqMan PCR Assay for Detection of *Bordetella pertussis* Infection from Clinical Specimens. Arch Pathol Lab Med. 126: 173-176
3. Loeffelholz MJ, Thompson CJ, Lon, KS, Gilchrist MJR. 1999. Comparison of PCR, Culture, and Direct Fluorescent-Antibody Testing for Detection of *Bordetella pertussis*. J Clin Micro 37: 2872-2876
4. McGowan KL. 2002. Diagnostic Tests for Pertussis: Culture vs. DFA vs. PCR. Clin Micro Newsletter 24: 143-150
5. Muller F-MC, Hoppe JE, vonKonig C-HW. 1997. Minireview: Laboratory Diagnosis of Pertussis: State of the Art in 1997. J Clin Micro 35: 2435-2443

*Massachusetts State Laboratory Institute's test, the only serological test recognized by CDC as confirmatory and only for patients in Massachusetts

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